



# AFCTN Report 94-081

AFCTB-ID  
94-039

Technical Raster Transfer Using:  
Industrial Data Link's GOLFPORT  
Project, Supporting:  
ASC/YIEC And OO-ALC/PKDTM  
(Contract #F0862-92-C-0012)  
MIL-STD-1840A  
MIL-R-28002A (Raster)  
Quick Short Test Report



09 May 1994

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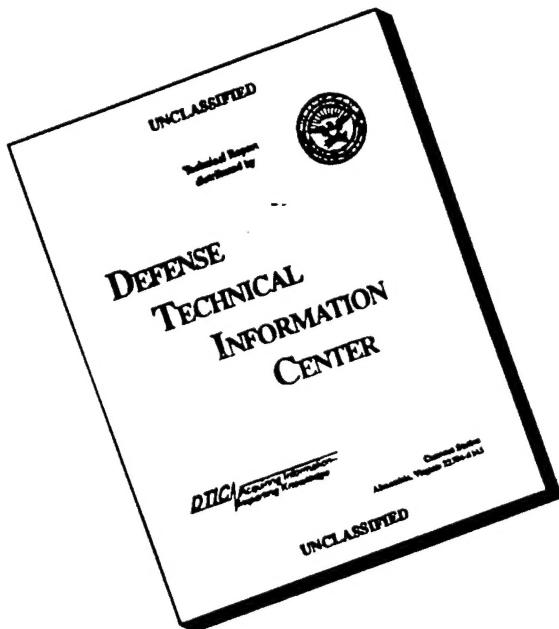
19960822 111



Prepared for  
Electronic Systems Center  
Air Force CALS Program Office  
HQ ESC/AV-2  
4027 Colonel Glenn Hwy Suite 300  
Dayton OH 45431-1672

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**AFCTN Test Report**  
**94-081**

**AFCTB-ID**  
**94-039**

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**Technical Raster Transfer**  
**Using:**  
**Industrial Data Link's:**  
**GOLFPORT Project Supporting:**  
**ASC/YIEC And OO-ALC/PKDTM**  
**(Contract #F0862-92-C-0012)**

**MIL-STD-1840A**  
**MIL-R-28002A (Raster)**

**Quick Short Test Report**  
**09 May 1994**

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**Prepared By**  
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# Air Force CALS Test Bed

## *Notification of Test Results*

**09 May 1994**

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

### **Industrial Data Link**

Identified as follows:

Title:	<b>Technical Raster Transfer</b>
Program:	<b>GOLFPORT</b>
Program Office:	<b>ASC/YIEC and OO-ALC/PKDTM</b>
Contract No.:	<b>F0862-92-C-0012</b>
QSTRNo.:	<b>AFCTB-ID 94-039</b>

Received on the following media:     **9-Track Tape**

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Standard	<b>Pass</b>
MIL-STD-1840A Media Format:	<b>Pass</b>
MIL-D-28000A IGES:	<b>N/A</b>
MIL-M-28001A SGML:	<b>N/A</b>
MIL-R-28002A Raster:	<b>Pass</b>
MIL-D-28003 CGM:	<b>N/A</b>

Formal results with associated disclaimer are documented and available from the AFCTB.

**Air Force CALS Test Bed  
HQ ESC/AV-2P  
4027 Colonel Glenn Highway, Suite 300  
Dayton, OH 45431-1672  
Phone: 513-257-3085      FAX: 513-257-5881**

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## 1. Introduction

### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Industrial Data Link's interpretation and use of the CALS standards in transferring technical Raster data. Industrial Data Link used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

## 2. Test Parameters

**Test Plan:** AFCTB 94-039

**Date of Evaluation:** 9 May 1994

**Evaluator:**  
George Elwood  
Air Force CALS Test Bed  
DET 2 HQ ESC/AV-2P  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

**Data Originator:**  
Debbie Glasser  
Industrial Data Link  
P. O. Box 900368  
San Diego CA 92190  
(619) 537-2960

**Data Description:**  
Technical Manual Test  
3 Document Declaration files  
19 Raster files

**Data Source System:**  
1840  
**HARDWARE**  
VAX 3600  
**SOFTWARE**  
AFCTN Tapetool  
AUTODESK AutoCAD R 12C2

**Raster**  
**HARDWARE**  
PC 486-33  
**SOFTWARE**  
Inset System HiJaak v2.0  
AFCTN validg4

Evaluation Tools Used:

MIL-STD-1840A (TAPE)  
SUN 3/280

AFCTN Tapetool v1.2.10 UNIX  
XSoft CAPS/CALS v40.4

MIL-R-28002 (Raster)  
HP 735

AFCTN xrastb.hp  
InterCAP X-Change v7.82

SGI Indigo2

AFCTN xrastb.sgi  
IGES Data Analysis (IDA) CALSView

SUN SparcStation 2

ArborText g42tiff  
Carberry CADLeaf Plus v3.1  
AFCTN validg4  
AFCTN xrastb.sun4  
IDA IGESView v3.0

PC 486

Inset Systems HiJaak Pro  
Expert Graphics RxHighlight v1.0

Standards  
Tested:

MIL-STD-1840A  
MIL-R-28002A

### **3. 1840A Analysis**

#### **3.1 External Packaging**

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was not enclosed in a barrier bag or barrier sheet material, as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

#### **3.2 Transmission Envelope**

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### **3.2.1 Tape Formats**

The tape was run through the AFCTN Tapetool v1.2.10 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's CAPS read1840A utility without any reported errors.

The physical structure of the tape meets the CALS MIL-STD-1840A and ANSI x3.27 requirements.

##### **3.2.2 Declaration and Header Fields**

No errors were found in the Document Declaration file and data file headers. This portion of the tape meets the requirements defined in MIL-STD-1840A for CALS format.

#### **4. IGES Analysis**

No Initial Graphics Exchange Specification (IGES) files were included in this evaluation.

#### **5. SGML Analysis**

No Standard Generalized Markup Language (SGML) files were include in this evaluation.

#### **6. Raster Analysis**

The tape contained 19 Raster files. All files were evaluated using the AFCTN *validg4* utility. This program reported all 19 files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN *xrastb.sun4* viewing utility. No problems were noted, however, many of the files were unusable. The text displayed as dots with definitions. Some graphics were impossible to read.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

All files were viewed using the software applications shown below. While no problems were encountered during the viewing operation, the quality of files D001R001, R002, R004, R005, D002R003, R004, R005, R006, and D003R003 were judged to be unacceptable. All of the listed files had text or graphics that were unreadable. Samples of the files are included in Appendix B, Section 10 of this report.

The Raster files were read into Carberry's *CADLeaf* software without a reported error. The images were displayed and printed.

The files were read using IDA's *CALSView* without a reported error.

The files were read into IDA's *IGESView* and *IGESView for Windows* without a reported error.

The files were read into Inset Systems' *HiJaak for Windows* without a reported error.

The files were read using InterCAP's *X-Change* without a reported error.

The Raster files were imported into Expert Graphics' *Rx-Highlight* and displayed without a reported error.

While the Raster files meet the CALS MIL-R-28002A specification, the overall quality was not acceptable. Many of the images had areas which appear to be text but are not readable.

## 7. CGM Analysis

No Computer Graphics Metafile (CGM) files were included in this evaluation.

## 8. Conclusions and Recommendations

The tape from Industrial Data Link was correct. No errors were reported in the physical structure or CALS headers. The tape meets the requirements defined in CALS MIL-STD-1840A and ANSI x3.27.

All Raster files meet the CALS MIL-R-28002A specification. However, the quality of the images in many cases was unacceptable.

The tape submitted by Industrial Data Link meets the CALS MIL-STD-1840A requirements.

## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information  
ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange  
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon May 9 11:00:07 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set068

Page: 1

File Name	File Type	Record Format/ Length	Block Length/ Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
D003	Document Declaration	D/00260	02048/000001	Extracted
D001R001	Raster	F/00128	02048/000019	Extracted
D001R002	Raster	F/00128	02048/000009	Extracted
D001R003	Raster	F/00128	02048/000006	Extracted
<<<< PART OF LOG FILE REMOVED HERE >>>>				
D003R003	Raster	F/00128	02048/000011	Extracted
D003R004	Raster	F/00128	02048/000008	Extracted

Catalog Process terminated normally.

## 9.2 Tape Evaluation Log

CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon May 9 10:59:53 1994

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CALS01

4

Label Identifier: VOL1

Volume Identifier: CALS01

Volume Accessibility:

Owner Identifier:

Label Standard Version: 4

HDR1D001                   CALS0100010001000000 94125 00000 000000

<<<< PART OF LOG FILE REMOVED HERE >>>>

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume CALS01 #####

##### End Of Tape File Set #####

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

### 9.3 Tape File Set Validation Log

CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Mon May 9 11:00:07 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set068

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: Industrial Data Link Corp. 10060 Willow Creek Rd. San Diego, CA  
92131 FSCM 4P410  
srcdocid: GA0005  
srcrelid: NONE  
chglvl: ORIGINAL  
dteisu: 19940505  
dstsys: ME  
dstdocid: GA0005  
dstrelid: NONE  
dtetrn: 19940505  
dlvacc: CDRL A003  
filcnt: R5  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: PARTS LIST / ASSEMBLY DRAWING  
docttl: Measurement & Debriefing System, Gulfport ACMI

Found file: D001R001

Extracting Raster Header Records...

Evaluating Raster Header Records...

srcdocid: GA0005  
dstdocid: NONE  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: NONE  
rtype: 1  
rorient: 000,270  
rpelcnt: 001500,001157  
rdensy: 0300  
notes: DRAWING

---

Saving Raster Header File: D001R001\_HDR  
Saving Raster Data File: D001R001\_GR4

<<<< PART OF LOG FILE REMOVED HERE >>>>

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D001.

Found file: D002  
Extracting Document Declaration Header Records...  
Evaluating Document Declaration Header Records...

srcsys: Industrial Data Link Corp. 10060 Willow Creek Rd. San Diego, CA  
92131 FSCM 4P410  
srcdocid: GA0008  
srcrelid: NONE  
chglvl: ORIGINAL  
dteisu: 19940505  
dstsys: ME  
dstdocid: GA0008  
dstrelid: NONE  
dtetrn: 19940505  
dlvacc: CDRL A003  
filcnt: R9  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: ASSEMBLY DRAWING / PARTS LIST  
doctl: Remote Site, NR6, Wiggins GNR ACMI

Found file: D002R001  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: GA0008  
dstdocid: NONE  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: NONE  
rtype: 1  
rorient: 000,270

---

rpelcnt: 001500,001159  
rdensity: 0300  
notes: PARTS LIST SHEET 1

<<<< PART OF LOG FILE REMOVED HERE >>>>

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D002.

Found file: D003 Extracting Document Declaration Header Records...  
Evaluating Document Declaration Header Records...

srcsys: Industrial Data Link Corp. 10060 Willow Creek Rd. San Diego, CA  
92131 FSCM 4P410  
srcdocid: GA0009  
srcrelid: NONE  
chglvl: ORIGINAL  
dteisu: 19940505  
dstsys: ME  
dstdocid: GA0009  
dstrelid: NONE  
dtetrn: 19940505  
dlvacc: CDRL A003  
filcnt: R4  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: ASSEMBLY DRAWING / PARTS LIST  
doctl: Panel, Power Distribution

Found file: D003R001  
Extracting Raster Header Records...  
Evaluating Raster Header Records...

srcdocid: GA0009  
dstdocid: NONE  
txtfilid: NONE  
figid: NONE  
srcgph: NONE  
doccls: NONE  
rtype: 1  
rorient: 000,270

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94-039

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rpelcnt: 001500,001159  
rdensity: 0300  
notes: PARTS LIST SHEET 1

<<<< PART OF LOG FILE REMOVED HERE >>>>

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D003.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

## 9.4 Other Tape Reading Logs

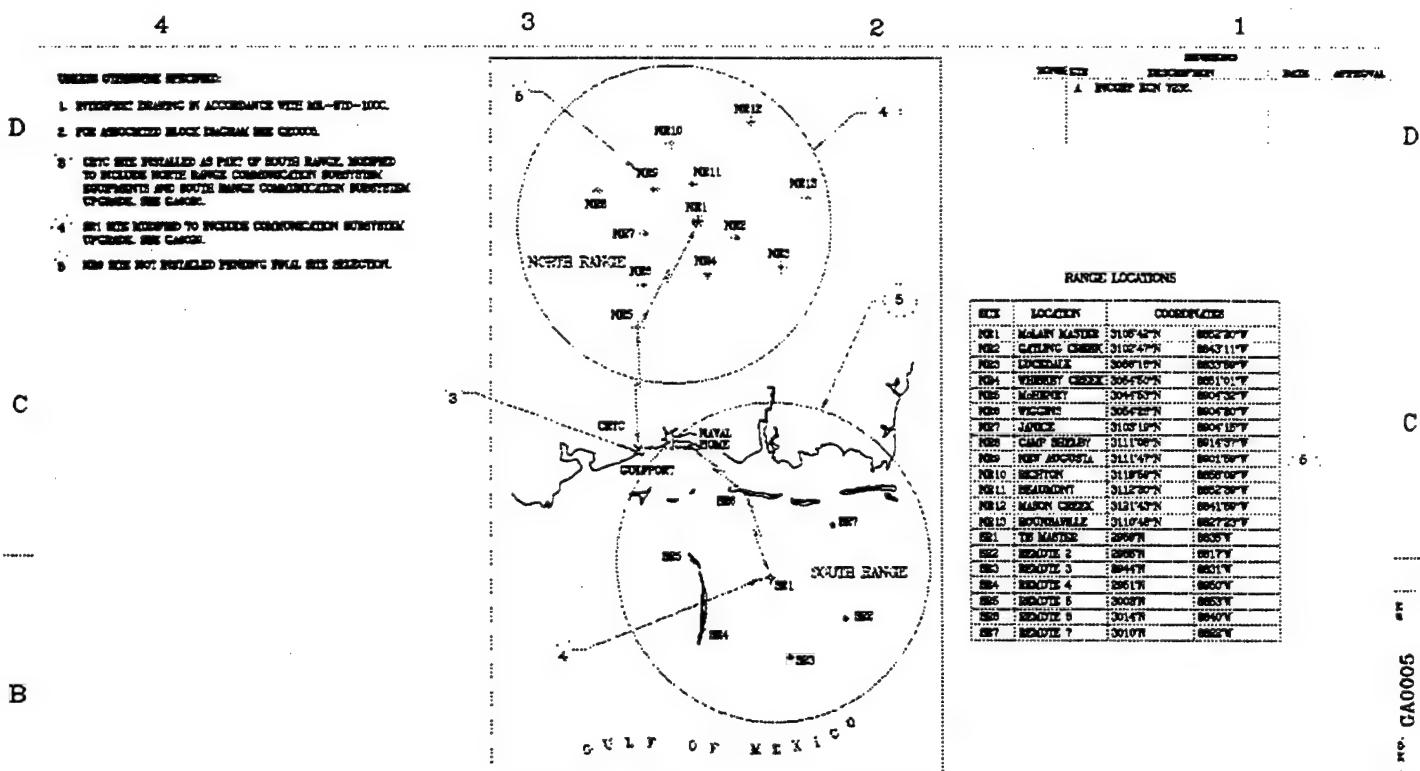
```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001'      | ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D002'      | ---  
/cals/caps/Bin/read1840A: --- Read declaration file 'D003'      | ---  
  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0005/GA00051.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0005/GA00052.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0005/GA00053.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0005/GA00054.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0005/GA00055.R.cci'.  
  
-- declaration file indicates 0 files of type T  
-- declaration file indicates 0 files of type G  
-- declaration file indicates 0 files of type H  
-- declaration file indicates 0 files of type Q  
-- declaration file indicates 5 files of type R  
-- declaration file indicates 0 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z  
  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00081.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00082.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00083.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00084.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00085.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00086.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00087.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00088.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0008/GA00089.R.cci'.  
  
-- declaration file indicates 0 files of type T  
-- declaration file indicates 0 files of type G  
-- declaration file indicates 0 files of type H  
-- declaration file indicates 0 files of type Q  
-- declaration file indicates 9 files of type R  
-- declaration file indicates 0 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z  
  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0009/GA00091.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0009/GA00092.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0009/GA00093.R.cci'.  
/cals/caps/Bin/read1840A: writing data file 'aftb9439/GA0009/GA00094.R.cci'.
```

-- declaration file indicates 0 files of type T  
-- declaration file indicates 0 files of type G  
-- declaration file indicates 0 files of type H  
-- declaration file indicates 0 files of type Q  
-- declaration file indicates 4 files of type R  
-- declaration file indicates 0 files of type C  
-- declaration file indicates 0 files of type X  
-- declaration file indicates 0 files of type P  
-- declaration file indicates 0 files of type Z

## 10. Appendix B - Detailed Raster Analysis

### 10.1 File D001R001

#### 10.1.1 Output CADLeaf



1 -1 ACMI

SEE SEPARATE PARTS LIST

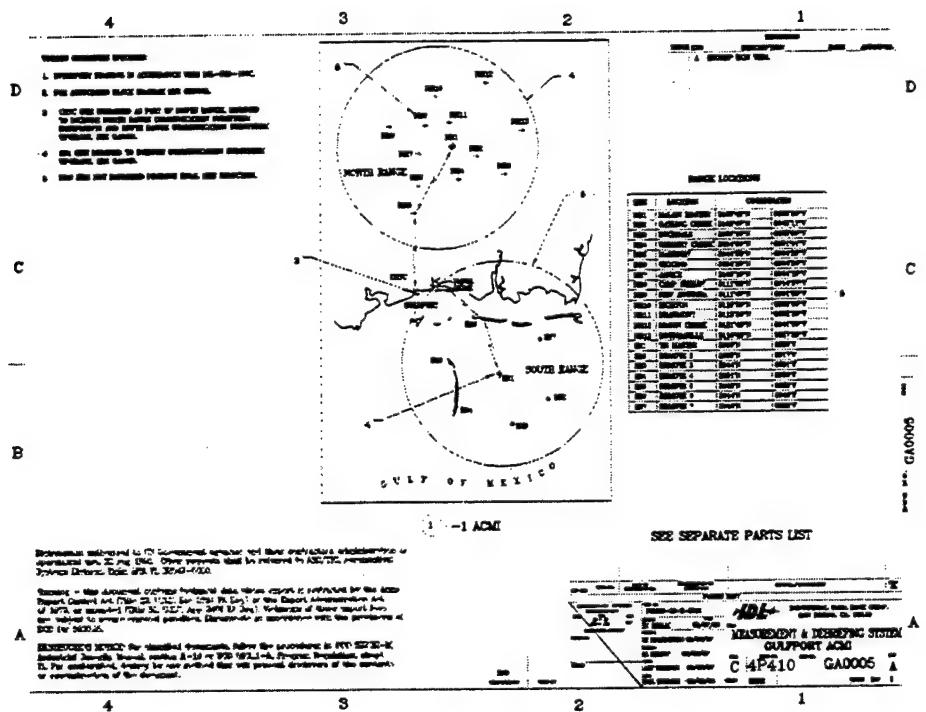
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3. 1000 N. BROADWAY	4. 1000 N. BROADWAY
5. TELECOM 5000	6. TELECOM 5000
7. 1000 N. BROADWAY	8. 1000 N. BROADWAY
9. SAN DIEGO, CA 92103	10. SAN DIEGO, CA 92103
A	
MEASUREMENT & DECODING SYSTEM	
GULFPORT ACMI	
C 4P410 GA0005 A	

### 10.1.2 Output HiJaak Pro



### 10.1.3 Output IGESView

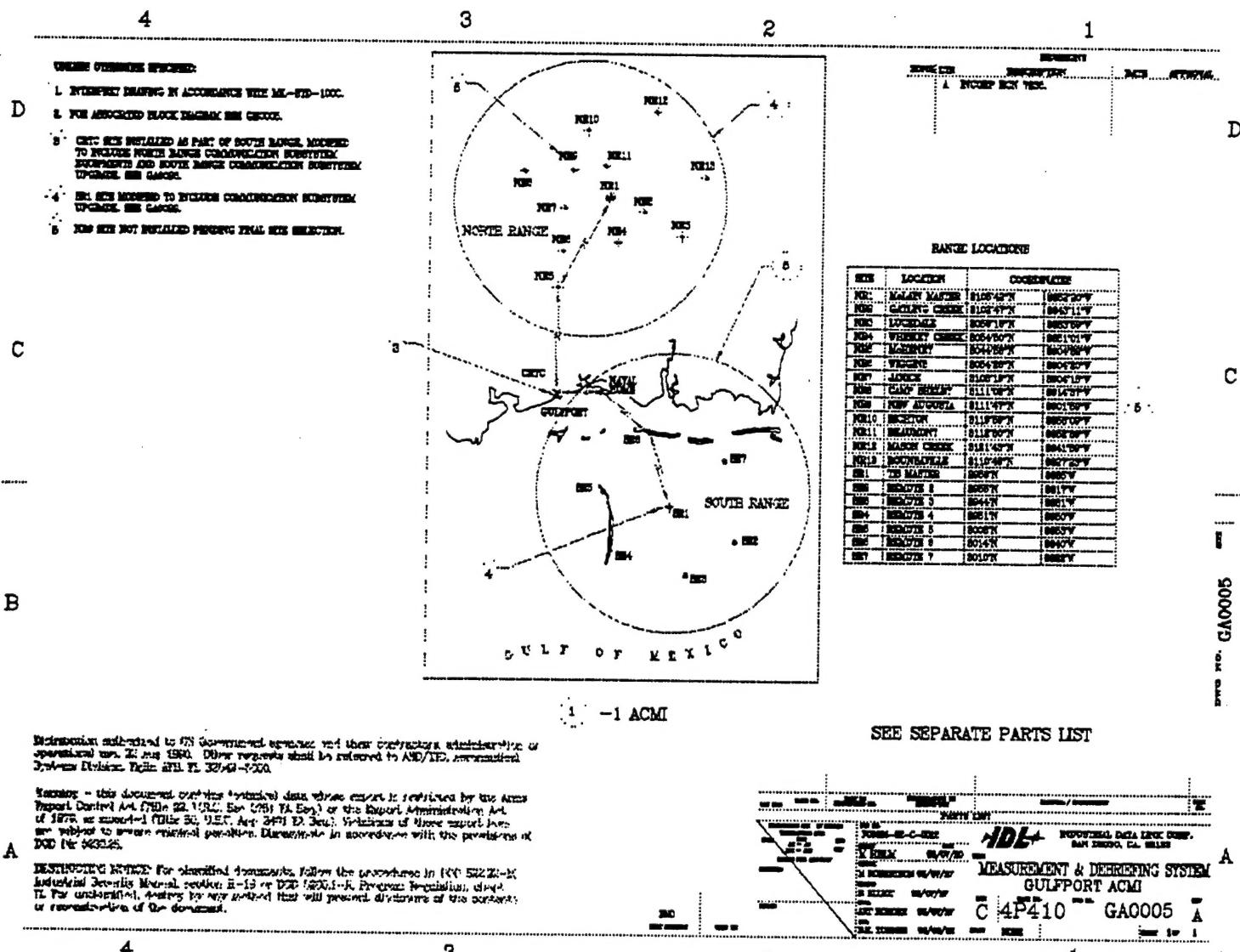
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### 10.1.4 Output RxHighlight



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## 10.2 Detail File D002R004

by contractors, administrators or operational units. 23 Aug 1990.  
Systems Division, Bldg 400, FL 22333-0000.

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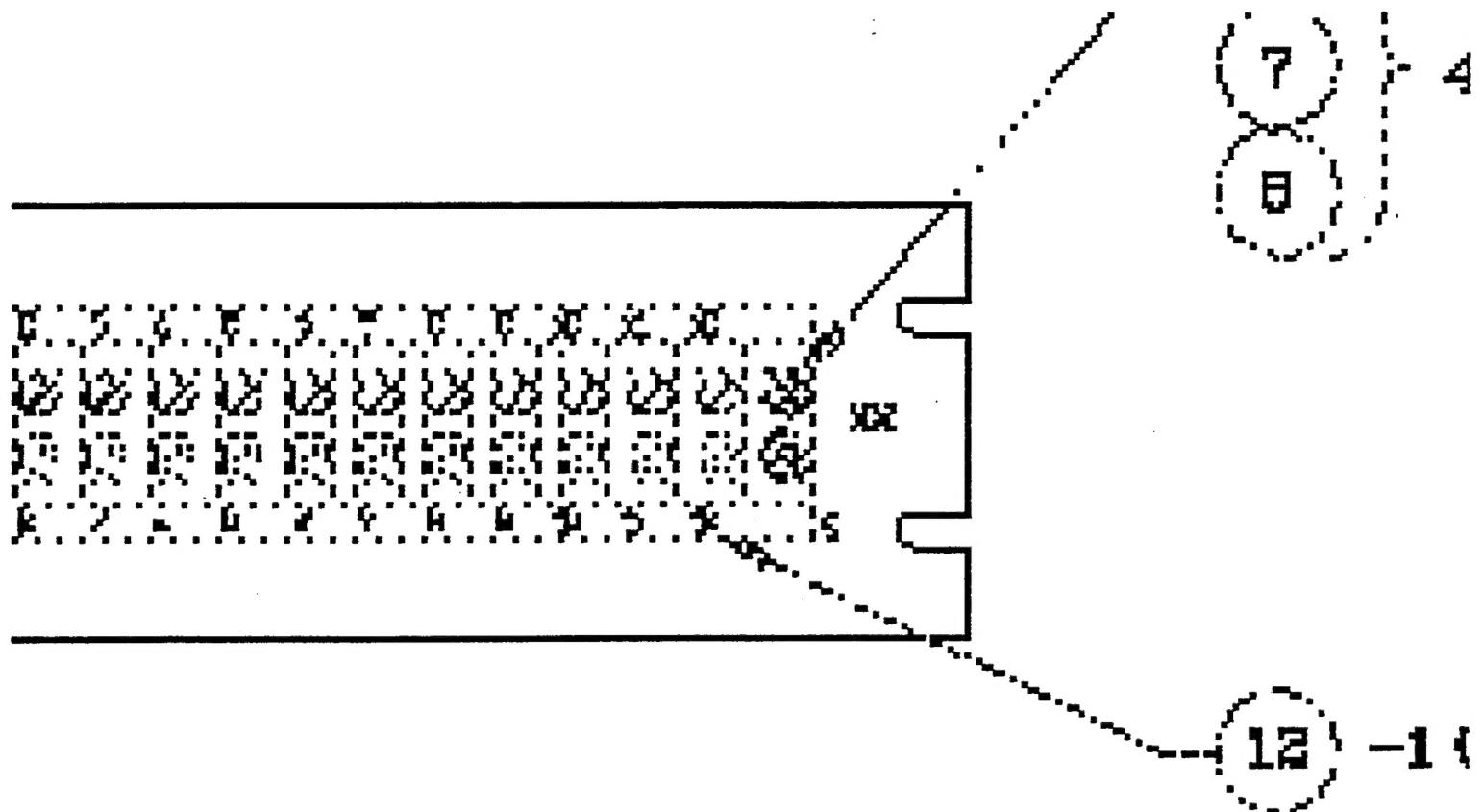
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### 10.3 Detail File D003R003



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